

## Hirsch Summary I.

### FROM MY POINT OF VIEW.....

1. The gridded, high gas pressure discharges are a simple, inexpensive way to get started in IEC.
  - Some applications possible with that configuration.
  - Some physics to study.
  - High Q is not possible.
2. The most promising direction is to ion guns and high vacuum. That's what's necessary for high Q.

## Hirsch Summary II.

### IMPORTANT ISSUES.....

1. Clearly show the existence of virtual cathodes & anodes. (EXP)
2. Determine if high ion trapping inside virtual anodes is possible. (THEORY & EXP.)
3. Find satisfactory ways of theoretically dealing with high particle densities at  $r = 0$ . (THEORY)
4. There's much to do in grid engineering:
  - Increase openness
  - Achieve better focusing of particles towards the center.
  - Reduce electron losses. (EXP)
5. Move to much lower pressures (higher vacuum) with guns. (EXP)
6. Invent ways to get rid of the grids.
  - Polywell?
  - Spindle cusps?
  - Other?

***ALONG THE WAY SHOW PROGRESS WITH "POLITICAL NEUTRONS," MEDICAL ISOTOPES OR OTHER.***